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Notice of Allowability	Application No.	Applicant(s)	
	10/772,312	BLODGETT, GREG A.	
	Examiner	Art Unit	
	Terry L Englund	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt (Nov 12, 2004) and Interview (Jan 19, 2005).
2. ☒ The allowed claim(s) is/are 17, 18 and 24-43 (now renumbered as claims 1-22, respectively for printing purposes).
3. ☒ The drawings filed on 06 February 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

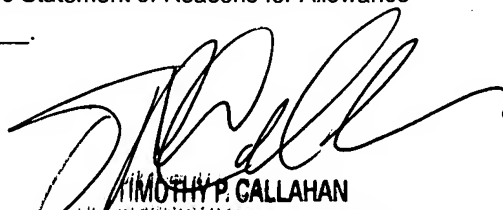
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>01192005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |


TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800
Paper No./Mail Date 01192005

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to the applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with the applicant's representative Christopher S. Chow (Reg. No. 46,493) on Jan 19, 2005.

The application has been amended as follows:

Claim 27, line 1: changed "there are" to --said plurality of single phase charge pump circuits comprises--;

line 3: added --four-- prior to "single";

Claim 32, lines 1-2: changed "there are" to --said plurality of single phase charge pump circuits comprises--;

line 3: changed "charge pump" to --four single phase charge pump circuits--;

Claim 33, lines 1-2: changed "plurality of" to --said four--;

Claim 34, line 1: changed "An" to --A--;

Claim 35, line 1: changed "29" to --34--;

Claim 36, line 1: changed "29" to --34--;

Claim 37, line 1: changed "29" to --34--; changed "there are" to --said plurality of single phase charge pump circuits comprises--;

line 3: changed "charge pump" to --four single phase charge pump circuits--;

Claim 38, line 1: changed "32" to --37--;

line 2: changed “plurality of” to --four--; and

Claim 42, line 19 (i.e. the last active line): deleted “plurality of”.

Claims 27, 32, and 37 were each amended to clearly relate the four circuits to the “plurality of single phase charge pump circuits” recited within their respective independent claim (i.e. 24, 29, and 34), thus correcting an inadvertent oversight by the examiner. Otherwise, the four circuits recited within each of claims 27, 32, and 37 could possibly be interpreted as being other than those already identified as being within the plurality. Claims 33 and 38 now relate the four circuits to the four circuits recited within claims 32 and 37, respectively. A previously overlooked typo was corrected in claim 34. The dependency of each of claims 35-38 was changed to ensure “The memory device” has a proper antecedent basis. The phrase “plurality of” was deleted from the “at least two of said plurality of” phrase in claim 42. Otherwise, the wording appeared to imply there could be two or more pluralities recited within the claim.

RESPONSE TO AMENDMENT/TD

The amendment and terminal disclaimer submitted on Nov 12, 2004 were reviewed and considered with the following results:

The amended paragraphs overcame the “C0_” and “242” related objections to the drawings, and the disclosure’s objections, as described in the previous Office Action. All of those objections have now been withdrawn.

The amended claims overcame all but one of the claim objections described in the previous Office Action. Although claim 28 had been amended to address/correct the same problem as claim 38, claim 38 had not been changed. However, after reconsidering the claim language within all of the active claims, it was determined the examiner had inadvertently

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overlooked the possibility that the four (and/or plurality of) single phase charge pump circuits recited within some of the claims (e.g. 27, 32-33, and 37-38) could be confusing. Therefore, those concerns were addressed/corrected by the Examiner's Amendment to more clearly recite how the circuits relate to one another. Also, several other concerns were also addressed by the Examiner's Amendment. Therefore, all previously identified claim objections, as well as those recently identified, have now been withdrawn.

The amended claims overcame most of the rejections under 35 U.S.C. 112, second paragraph as described in the previous Office Action. However, the antecedent rejections of claims 35-38 (e.g. see page 6 of the previous Office Action) had been inadvertently overlooked, and several additional concerns were identified by the examiner when all of the active claims were carefully reviewed and considered. Since the Examiner's Amendment addressed/corrected all of these rejections and/or concerns, all 35 U.S.C. 112 related rejections have been withdrawn.

Amended claims 17 and 40 overcame the rejections of claims 17-18 and 40-41 under 35 U.S.C. 103(a) with respect to Chern/Kleveland as described in the previous Office Action. Neither reference clearly shows or discloses the plurality of charge transfer circuits as now recited within each of claims 17 and 40. Therefore, these prior art rejections have been withdrawn.

The terminal disclaimer was approved and entered. It overcame the double patenting rejections of claims 24-28 and 42-43 described in the previous Office Action. Therefore, those rejections have also been withdrawn.

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Between the entry of the applicant's amendment and terminal disclaimer, as well as the Examiner's Amendment described above, there is no known objection or rejection remaining within the present application.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

None of the prior art references shows or discloses the charge pump (circuit) as recited within independent claims 17, 24, 29, 34, 39-40, and 42-43. More specifically, none of the references clearly shows/discloses: 1) the ancillary phase circuits, and a plurality of charge transfer circuits, as recited within claims 17 (upon which claim 18 depends) and 40 (upon which claim 41 depends), wherein the respective phase circuit controls a transistor in the primary phase circuit, and the transfer circuits transfer charges among the four circuits; 2) the ancillary circuits, and a plurality of charge transfer circuits, as recited within claims 24 (upon which claims 25-28 depend), 29 (upon which claims 30-33 depend), and 34 (upon which claims 35-38 depend) wherein the respective ancillary circuit has an ancillary capacitor coupled to the bootstrap capacitor of an associated pump circuit, and the transfer circuits transfer charges among the pump circuits; 3) a circuit, including a flip-flop, for transferring energy from the first to the second bootstrap capacitor as recited within claims 39 and 43; and 4) the first-fourth single phase charge pump circuits, and the charge transfer circuit, as recited within claim 42, wherein the transfer circuit transfers charge between at least two of the charge pump circuits. Since there is no strong motivation to modify or combine any prior art reference to ensure the charge pump (circuit) also includes any one of the above limitations, with respect to the other limitations

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recited within their respective claim, the claims are deemed patentably distinct over the prior art of record.

Claims 17-18, and 24-43 are allowed, and have been renumbered as claims 1-22, respectively for printing purposes. The renumbering takes into account the cancellation of claims 1-16, and 19-23.

Any comments considered necessary by the applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication, or previous communications, from the examiner should be directed to Terry L. Englund whose telephone number is (571) 272-1743. The examiner can normally be reached Monday-Friday from 7 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (571) 272-1740.

The new central official fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Terry L. Englund

19 January 2005